

## Recent Patents from TelWiSe Group

- ❑ K. Giridhar, A. Arunesh and A. Harivignesh, “**7-2x+ fronthaul functional split for CSI-RS in 5G radio access networks**”, India Patent No: 584215, Date of Grant: March 20, 2026. (**Granted**).
- ❑ K. Giridhar, C.R. Venkatesh, “**Simultaneous sharing of spectrum in wireless communications**”, United States of America, Patent No: **US 12,289,609 B2**, Date of Grant: April 29, 2025. (**Granted**).
- ❑ K. Giridhar, C.R. Venkatesh, “**Simultaneous sharing of spectrum in wireless communications**”, United States of America, Patent No: **US 12,081,996 B2**, Date of Grant: September 03, 2024. (**Granted**).
- ❑ K. Giridhar, C.R. Venkatesh, “**Simultaneous sharing of spectrum in wireless communications**”, United States of America, Patent No: **US 11,937,093 B2**, Date of Grant: March 19, 2024. (**Granted**).
- ❑ K. Giridhar, C.R. Venkatesh, “**Simultaneous sharing of spectrum in wireless communications**”, India Patent No: 360451, Date of Grant: March 8, 2021. (**Granted**).
- ❑ B. Venkateswara Rao, G.R.B. Prasad, C.R. Venkatesh, C. Ramanathan, Y.S.S. Krishna Madan, K. Giridhar, K. S. Ramesh, Y.C. Shashikant, “**A System for Exchange of Frequency Hopping States in Block Modulated Frequency Hopping Spectrum**”, India Patent No: 513481, Date of Grant: February 21, 2024. (**Granted**).
- ❑ S. Subhasini, Y.S.S. Krishna Madan, K. Giridhar, Manoj Kumar Dhaka, “**A method for multi-point to point communication**”, Indian Patent Application No. 202311074410, filed on Nov. 07, 2023. (Under examination).
- ❑ D. Upalekar, S. Bhat, A. Mohan, R. Preethi, K. Giridhar, “**Channel estimation, throughput and fairness for multi-user, multiple-input, multiple-output (MU-MIMO) systems through dynamic port allocation**”, US Patent Application No: 18131303, Publication No: US-2023-0327916-A1, Publication Date: October 12, 2023. (Under examination).
- ❑ D. Upalekar, S. Bhat, A. Mohan, R. Preethi, K. Giridhar, “**Channel estimation through dynamic allocation in downlink transmission for multi-user, multiple-input, multiple-output (MU-MIMO) systems**”, US Patent Application No: 18131312, Publication No: US-2023-0327917-A1, Publication Date: October 12, 2023. (Under examination).
- ❑ D. Upalekar, S. Bhat, A. Mohan, R. Preethi, K. Giridhar, “**Channel estimation through dynamic port allocation in uplink transmission for multi-user, multiple-input, multiple-output (MU-MIMO) systems**”, US Patent Application No: 18131324, Publication No: US-2023-0327918-A1, Publication Date: October 12, 2023. (Under examination).